

46. (Amended) A hybrid vehicle power train comprising an engine and an electric motor,

a first torque flow path including a clutch and transmission coupled between said engine and traction wheels of the hybrid vehicle;

a second torque flow path coupled between the electric motor and traction wheels of the hybrid vehicle; and,

a logic control circuit for interrupting torque path without interrupting operation of said engine during disengagement of said clutch and application of torque through said second torque flow path to the traction wheels of the hybrid vehicle.

I.

Claims 34, 35, 37, 40 and 42-44 stand rejected under 35 USC 102 over Ellers. Ellers' neither shows, teaches or suggests "control circuit activation of a second coupling means for connecting the combustion engine to an electric generator for charging a battery during the cruise mode off condition" as specified in Claim 34. In contrast, Ellers is limited to actuating a charging function "Fail Safe System" only when battery voltage is low, i.e. below 5.25 per 6 volt battery and does not make available the charging path capability as defined with specificity in Claim 34 (see particularly col. 2, line 47 on with respect to Clutch 65).

Dependant Claim 35 is deemed clearly patentable as Claim 34 further specifying charging speed conditions and not at some low voltage level.

Claim 37 specifically defines transfer of power from an engine to a generator based on running state not battery voltage level as in Ellers. Dependant Claim 40 calls out the vehicle running state parameter for effecting the charging path not some low voltage level.

II.

Claim 36 stands rejected over Ellers in view of Fields et.al. under 35 USC 103.

The only provision for electrical system "failure" in Ellers is for low battery conditions, which is closure of clutch 65 so that the vehicle can be driven as a series hybrid. There is no provision for total battery failure or electric motor failure in Ellers, the only resort being to call for a tow.

It is not seen where Fields "teaches using only the engine for propelling the vehicle in the event the batteries are run down". Fields actually teaches the opposite; viz. charging systems which eliminate the possibility of being marooned with dead batteries (see col. 4, lines 44-46) and having to couple in the combustion engine in the event of an inoperable power condition.

III.

Paragraph 6 of the office letter rejects each of claims 38, 39, 41 and 45 over Ellers under 35 USC 103.

The Examiner states that it would be obvious to provide control means, set a time period after a predetermined running state to reduce on/off cycling. There is no delay either suggested or taught by Ellers, in fact the contrary appears to be clearly taught which teaches a mechanical transmission driving an electric motor and a continuously variable torque converter coupled to the ICE. Note especially col. 3, penultimate line through col. 4 line 10 where there is automatic synchronization without any types of time delays during the synchronization process.

Claims 39, 40 and 41 further recite certain different time delay parameters and are also as a consequence believed allowable.

Claim 45 also rejected, has been cancelled without prejudice.

IV.

Claims 46-49 have been rejected over Kenyon in view of Lynch under 35 USC 103.

While Lynch et. al. shows a clutch 23, no logic circuit is shown in Lynch et.al. nor a logic control circuit functioning during disengagement of the clutch as called for specifically in applicant's claim 46. How the teaching of the clutch of Lynch et.al.

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could be obvious to provide in Kenyon without an accompanying logic circuit to control the clutch is not understood.

Dependant claims 17-49 are allowable at least for the same reasons as claim 46.

There is no hint of how emergency electrical system problems would be handled in either Kenyon or lynch et.al. other than calling for a tow.

There is no suggestion of a logic circuit controlling a period of torque transfer in either reference cited in combination against claim 49.

A claim 50 has been added to define more specifically cruise mode operation (see e.g. applicants specification on page 2 beginning at line 16). Nothing in the references of record suggests this cruise mode operation.

Early notification of allowance of the application is respectfully solicited.

Respectfully submitted,



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